





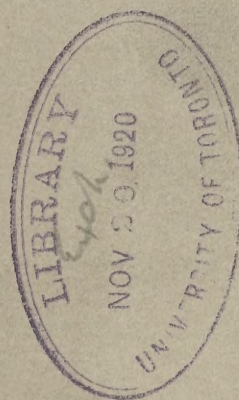
21  
8  
STORAGE

THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES

BROOKLYN MUSEUM  
SCIENCE BULLETIN  
VOL. 3, NO. 2

SOUTH AMERICAN ARACHNIDA, CHIEFLY FROM THE  
GUANO ISLANDS OF PERU

BY  
RALPH V. CHAMBERLIN



Published by the  
BROOKLYN MUSEUM  
EASTERN PARKWAY, BROOKLYN, N. Y.  
SEPT. 27, 1920

*(Concluded from Third Cover Page)*

### MISCELLANEOUS

Bibliography of Japan. By STEWART CULIN. 1916.....	.10
Some Books upon Nature Study in the Children's Museum Library. Compiled by Miriam S. Draper. 1908. Second edition, 1911. Some Nature Books for Mothers and Children. An annotated list. Compiled by Miriam S. Draper. 1912.	
Exhibits at the Central Museum. Sept. 1, 1913. 4p.....	.01
The Statues and their Meaning. 3p.....	.01

### COLD SPRING HARBOR MONOGRAPHS

The Museum also distributes the Monographs of the Marine Biological Laboratory at Cold Spring Harbor, Long Island, of which seven numbers have been published to date.



## BROOKLYN MUSEUM

SCIENCE BULLETIN

VOL. 3, NO. 2

SOUTH AMERICAN ARACHNIDA, CHIEFLY FROM THE  
GUANO ISLANDS OF PERU.

BY RALPH V. CHAMBERLIN.

Most of the Arachnids listed in this paper were collected by Dr. Robert Cushman Murphy, of the Brooklyn Museum, on the guano islands off the coast of Peru, on dates from Oct., 1919 to Jan., 1920, specimens being secured on Chincha, Mazorca, and Lobos de Tierra islands. From the first mentioned islands there are represented *Hadruiroides lunatus* (L. Koch), *Chinchipus peruvianus*, sp. nov., *Dysdera murphyi*, sp. nov. *Tetragnatha aptans*, sp. nov. *Tetragnatha* sp., and *Ornithodoros amblus*, sp. nov. On Mazorca Id. were secured the types of the interesting new attid spider, *Sitticus mazorcus*. On Lobos de Tierra Id. were taken specimens of *Hadruiroides lunatus* (L. Koch), *Loxosceles nesophila*, sp. nov., and *Ornithodoros tulaje* (Guérin-Mèneville). An immature tick was taken from a bat on Asia Id.

In addition to these species, occasion is taken to include descriptions of a new scorpion from Quito, Ecuador, and a new spider from Huadquina, Peru, noted in the course of the work on the material collected on the islands.

## SCORPIONIDA.

## VEJOVIDAE.

## HADRUROIDES LUNATUS (L. KOCH).

*Telegonus lunatus* L. Koch, Verh. zool.-bot. Ges. Wien, 1867, 17 p. 235.

Numerous specimens of this species were taken both on Chincha Is. and Lobos de Tierra Id. It is otherwise known to occur from Valparaiso in Chile northward through Bolivia and Peru to Ecuador. Dr. Murphy notes that on Chincha Is. these scorpions were found chiefly under the carcasses of dead birds.

## UROCTONOIDES, gen. nov.

Like *Uroctonus* but differing in having the lower margin of movable finger of chelicera wholly smooth. Median lamella of comb similarly divided beyond base, the sclerites fewer, typically four. Fingers of hand of palpus with single row of granules, with a few larger lateral granules on each side. Stigmata oval.

Genotype.—*U. fractus*, sp. nov.

## UROCTONOIDES FRACTUS, sp. nov.

Pl. 4, figs. 1 and 2.

Male.—The type, which is lacking the tip of the cauda, is dark reddish brown, almost black, the legs paler, the end joint paler than others. Anterior margin of cephalothorax very slightly excavated, much less deeply than usual in *Uroctonus mordax*, and the bottom of the excavation extending forward in an obtuse angle, the apex of which is in line with the margin at the side. Median longitudinal furrow obviously deeper and wider both in front and caudad of eye-tubercle than in that species. Surface of carapace posteriorly and on side region strongly granular, the eye-tubercle and the area in front of it coarsely densely punctate. Dorsal surface of abdominal segments also granular, the ventral surface appearing smooth and shiny, under the lens seen to be more finely punctate. Last ring of preabdomen without any keels or tubercles or granules beneath. Keels of femur of palpus coarsely granular or tubercular, also those of tibia; intervening surfaces strongly punctate. Posterior border of ventral surface of tibia with five trichobothria. Keel from immovable finger of hand obsolete; surface of proximal region of hand in general with low tubercles or granules arranged more or less in a network; surface of fingers punctate. Fingers with a conspicuous lobe, that of movable one obtuse, that of immovable one acute. Teeth of comb seven in number.

A form apparently nearly the same size as *U. mordax* Thorell.

Locality.—Ecuador: Quito. Type, Museum of Comparative Zoology, 518.

## SOLPUGIDA.

## SOLPUGIDAE.

## CHINCHIPPUS, gen. nov.

Anterior margin of carapace moderately bowed forward. Margin of

eye tubercle with two long submedian setae and a shorter one each side of this pair in the type. Mesal surface of chelicerae with strongly developed stridulating ridges which extend below the middle. Third tooth of dorsal finger of chelicera greatly reduced, the fifth tooth as large as or a little larger than the fourth. Lateral plates of the rostrum shorter than the dorsal. Metatarsus of palpi beneath with numerous furcate setae and also with furcate setae above with fewer long and short ordinary setae. First legs without claws. Tarsi of all legs only one-jointed; with long paired spines beneath which project out laterally. Metatarsus of legs II and III with a series of three long, slender spines above in dorso-caudal position. Tarsus IV six or more times as long as thick, and distal joint of femur IV more than four times longer than high. Plate of ectal malleoli typically near two and two-third times as wide as high. Last abdominal segment circular, the anus a symmetrical vertical slit.

Falls in the group Daesiinae, apparently near the genus *Gnosippus* of Palestine and Egypt.

Genotype.— *C. peruvianus*, sp. nov.

CHINCHIPPUS PERUVIANUS, sp. nov.

Pl. 4, fig. 3.

Cephalothorax dusky brown with a median longitudinal pale stripe. Ocular tubercle black, with no median pale line. Chelicerae fulvous, smoky above and over upper part of ectal side; tips of fingers and teeth dark. Lower finger of chelicera with two large teeth and an intermediate much reduced one, the first tooth larger than the third. Upper finger with ten teeth along outer edge; of those the third is much reduced and the fifth a little larger than the fourth; the sixth, eighth and tenth teeth much larger than any others, the seventh and ninth reduced and of nearly same size as the intermediate tooth of the lower finger. Metatarsus of palpus armed along ventral edges with spines; with rather sparse long and short setae above and below and also with very numerous furcate setae of which the ventral ones average somewhat longer than the dorsal. Metatarsi II and III with three spines on caudal side above, one at distal end beneath, between which and the distal one of the dorsal series there is a third distal spine, on the second legs at least. Metatarsus IV with  $1 + 1 + 2$  spines. Legs bearing simple and furcate setae, the latter longer and more numerous on proximal joints as usual, and on tibiae and meta-



tarsi in general more numerous at distal end above than elsewhere on these joints. Length, 13.5 mm.

*Locality*.—Peru: Chincha Is. One Female taken Oct. 26, 1919 in a building of the Guano Administration. Type, Museum of Comparative Zoology, 519.

## ARANEIDA.

### DYSDERIDAE.

#### DYSDERA MURPHYI, sp. nov.

Carapace from fuliginous, with median region clearer brown, to chestnut along middle and mahogany laterally. Sternum fulvous, brown about borders. Legs from light brown to fuliginous. Abdomen grey, typically darker at base above. Eyes large, the laterals subequal and a little larger than the medians, the ratio of diameters being nearly as 6:5. Median eyes with the posterior laterals forming a slightly procurved row. Medians nearly contiguous, once and a half their diameter from the laterals. Clypeus obviously higher than the diameter of an anterior eye. Sternum long, posterior end angular, a little obtuse, not produced between coxae. Tibia I beneath with 4-4 spines; in front and also below with four short spines in a single series. Metatarsus I with 7-6 to 6-4 spines beneath. Femur I armed above at distal end with two spines, one long one on anterior side and a short one on posterior. Patella I unarmed. Tibia II with 4-4 spines beneath, three spines on anterior and none on the posterior. Metatarsus II with 6-7 spines beneath, those of the first and third pairs much longer than the others. Femur II armed as I. Patella unarmed. Tibia III with three spines beneath in one series. Metatarsus III with three spines beneath, two on anterior side, and one on posterior. Femur III with spine on anterior side at distal end above, none on posterior. Metatarsus IV armed at distal end beneath; the leg otherwise unarmed.

Length, 12 mm. Length of cephalothorax, 3.5 mm. Length of tib. + pat. I, 4.5 mm.; of tib. + pat. IV, 4.4 mm.

*Locality*.—Peru: Chincha Is., R. C. Murphy. Six females were collected Oct. 12, 1919. Type, Museum of Comparative Zoology, 521; para-type, Brooklyn Museum.

Dr. Murphy notes that specimens of this spider, or related forms, are abundant on nearly all the Peruvian islands, where they make silk-lined



tunnels in the guano and stony soil. They appear, to some extent at least, to feed upon the tick described below, as Dr. Murphy notes the frequent finding of the shriveled remains of the latter in the spiders' tunnels.

This species is distinct from the other known American species in the spining of the legs. Somewhat suggesting the Bolivian *D. towarensis*, it is a larger species with tibia II unarmed behind instead of bearing three spines as on the anterior face, femur I bearing but one spine above instead of three or four with one on anterior face, metatarsus IV armed at distal end instead of leg IV being wholly unarmed, etc.

### SCYTODIDAE.

#### *LOXOSCELES ACCEPTA*, sp. nov.

Pl. 4, figs. 4 and 5.

*Loxosceles rufescens* Chamberlin (nec Dufour), Bull. M. C. Z. 1916, 60, p. 213.

Carapace, sternum and legs fulvous to light brown, occasionally of slightly rufous cast. Abdomen uniform grey. Eyes moderately large. Medians contiguous, the laterals subcontiguous, separated from medians by a distance a little less than the line of the latter (ratio of distances at most as 5:6). Claws of legs I, II, III, and IV with respectively eleven, ten, six and five teeth on anterior claw. In the palpus of the male the tibia is thickened and swollen out ventrally somewhat as in *rufescens* but proportionately much longer than in that form; the length being fully twice the greatest thickness. The tarsus is broadly ovate, distally obtusely rounded. Spine of bulb long and evenly curving, narrowing distad and becoming slender and pointed. (See figs. 4 and 5.)

Length (male) 8.5 mm. Length of cephalothorax, 4 mm.; width, 3.2 mm. Tib. + pat. I, 9.5 mm.; tib. + pat. II, 10.5 mm.; tib. + pat. IV, 9.5 mm.

*Locality*.—Peru: Huadquina (Yale Exped., July, 1911). Numerous specimens. Type, Museum of Comparative Zoology, 518; paratypes, Museum of Comparative Zoology, 163 and 164.

The relationship of this species to the other South American forms of which males are known may be shown by the following key which is a modification of the one given by Simon in Ann. Soc. Ent. Belg., 1907, 51, p. 246.

*Key to Males of South American Species of Loxosceles.*

- a. Tibia of palpus very long, more than three times longer than thick; chelicerae granulose in front.
  - b. Tibia, viewed from above, long ovate, at base almost twice as thick as the femur; chelicerae chestnut in front, covered almost over whole surface with large black uneven granules irregularly arranged. . . . . *L. laeta* Nicolet
  - bb. Tibia, viewed from above, with sides nearly parallel, not much thicker than femur; chelicerae fulvo-rufulous, smooth, with a few scattered granules at base and ectally. . . . . *L. taciopalpus* Simon
- aa. Tibia of palpus less than twice as long as thick or scarcely more; chelicerae not granulose.
  - b. Bulb of palpus attenuated distad into base of spine; spines sinuous or sigmoidal. . . . . *L. spadicea* Simon
  - bb. Bulb depressed; spine long and slender, evenly curved.
    - c. Tarsus in dorsal view transverse, wider than long. *L. rufipes* Lucas
    - cc. Tarsus in dorsal view ovate, longer than wider.
      - d. Tibia strongly inflated, scarcely one fourth longer than thick. . . . . *L. serrata* Simon
      - dd. Tibia twice as long as thick. . . . . *L. accepta*, sp. nov.

## LOXOSCELES NESOPHILA, sp. nov.

Pl. 4. fig. 6.

Female.—Carapace, sternum and legs fulvous, the carapace sometimes slightly rufescent. Abdomen grey. Anterior median eyes contiguous and the laterals of each side narrowly separated as usual. The eye relations similiar to those of *L. acceptus* but the median eyes not so far forward, nearer to the laterals, the space separating the two groups being much less than the length of the line of median eyes (about 7: 10) instead of nearly equalling it.

Claws of leg I with eleven teeth, all of which are long, of leg II with ten, III with six, and IV with six of which the most proximal is much reduced.

Length, 10.5 mm. Length of cephalothorax, 4.5 mm.; width, 3.8 mm. Tib. + pat. I, 6.5 mm.; tib. + pat. II, 7. mm.; tib. + pat. IV, 7 mm.

*Locality*.—Peru: Lobos de Tierra Id. Jan., 1920. Two females, one not fully adult. Type, Museum of Comparative Zoology, 522.

In the absence of males it is difficult to be certain as to the precise

affinities of this form. It is separated from *L. accepta* of the mainland chiefly because of the difference in eye relations noted above.

## ARGIOPIDAE.

### TETRAGNATHA APTANS, sp. nov.

Pl. 4 figs. 7 and 8.

*Female*.—Carapace fulvous or with a median brown stripe which is geminate on head and a brown stripe along each lateral margin. Sternum dusky or black, sometimes paler at middle. Labrum black. Legs with fulvous background; femur, tibia and metatarsus typically with a black annulus at distal end, the femur and tibia when in full color also dusky elsewhere but having a distinct light ring adjacent to the distal black one and the metatarsus darkened along middle section. Abdomen with the usual elongate folium above; ventrally a median longitudinal black band bordered on each side by a narrower orange or rufous stripe.

Abdomen widening conspicuously from caudal end forward to in front of middle, from where it again narrows; anteriorly protruding forward and there weakly bigibbous.

Posterior row of eyes moderately recurved; median eyes somewhat more than their diameter apart, once and a half or more their diameter from the lateral on each side. Posterior lateral eye larger than the anterior, the eyes separated by less than the diameter of the posterior one. Area of median eyes a little wider behind than in front and than the length. Anterior median eyes farther from the posterior medians than the laterals on each side are from each other. Anterior median eyes their diameter apart and about twice as far from the laterals.

Chelicerae more than eight tenths (seventeen twentieths) as long as cephalothorax. Chelicerae with nine teeth along lower margin of which the second is reduced, with the intervals between it and the first and third respectively wider than other intervals; first tooth somewhat stouter than third, the third and three following subequal, the remaining ones moderately decreasing. Upper margin also with nine teeth, the intervals between first and second largest, that between second and third a little less, the other seven close together; first three teeth large, the others gradually decreasing caudad. At distal end of chelicera on ventral side a short process of triangular outline. Claws of chelicera



strongly sinuous; near base of ventral side a short conical tooth or process projecting ventrad so that its tip lies just ectad or distoectad of that of the first ventral tooth of margin of furrow. (See figs. 7 and 8.)

Length, 11 mm. Length of cephalothorax, 3.5 mm. Tib. — pat. I, 8 mm.

*Locality*.—Peru: Chincha Is. Five females taken in their webs in houses. Dec. 1, 1919. Type, Museum of Comparative Zoology, 523; paratypes, Museum of Comparative Zoology, 524 and Brooklyn Museum.

#### TETRAGNATHA sp. Immature.

Female.—Coloration of carapace, sternum and legs nearly as in *aptans*. Annuli of legs more distinct, the tibiae and metatarsi showing a distinct pale annulus toward each end adjacent to terminal black rings with a broad dark region proximad of it. Abdomen above with a dark band having wavy edges bordered on each side by a silver-colored stripe, the dorsal band itself blackish with small included silver-spots, a median pale line with cross-branches, and several pale cross-marks caudad; venter with a median longitudinal black stripe bordered on each side with a silver-colored stripe.

*Locality*.—Peru: Chincha Is. Oct. 26, 1919. In building of the Guano Administration. One specimen. Possibly the same species as the preceding.

#### ATTIDAE.

##### SITTICUS MAZORCANUS, sp. nov.

Pl. 4, fig. 9.

Male.—In its generic characters conforming closely to *S. terebratus* (Clerck), type of the genus. Anterior row of eyes recurved in similar degree but lateral eyes relatively a little farther from the medians. Integument of carapace and sternum dark, black or nearly so, densely clothed with light grey or white hairs and reddish brown hairs and with fewer longer dark setae, appearing lightest on dorsal region of head, with more of the brownish hairs on face and sides. Palpi densely clothed with bright white hair. Integument of femora of legs darker than that of the other joints, blackish; all legs completely clothed with light grey or whitish hair. Abdomen densely clothed with the light hair with fewer

reddish brown hairs intermingled; no definite patterns. Upper margin of furrow of chelicera with three teeth, the lower with none. Tibia I armed beneath with 3-3 spines, laterally armed as is also patella I. Tibia IV armed above. Claws of last legs armed with six teeth which decrease in length proximad. Characterized especially by the form of the tibial apophysis and the structure of the tarsal bulb which are represented in fig. 9.

Length, 5 mm. Length of cephalothorax, 2.5 mm. Length of tib. + pat. IV, 2.2 mm.

*Locality*.—Peru: Mazorca Id. Two males were taken Dec. 29, 1919. Type, Museum of Comparative Zoology, 525.

This appears to be the first species of the genus recorded from South America.

## ACARINA.

### ARGASIDAE.

#### ORNITHODOROS TULAJE, (Guérin-Mèneville).

*Argas tulaje* Guérin-Mèneville, Rev. Mag. Zool., 1849, ser. 2, I, p. 342, pl. 2.

About a score of specimens of typical form were taken on Lobos de Tierra Id. in Jan., 1920. The larger specimens are 5 mm. in length. Dr. Murphy noted that the specimens are pale in life, darkening in the preservative. One specimen 3 mm. long was taken from the body of a nestling booby, *Sula nebouxi*, the first record of this bird as a host for the species. Six-legged larval specimens, of which many were taken from the plumage of the adult booby, seem to be this species.

#### ORNITHODOROS AMBLUS, sp. nov.

Pl. 4, fig. 10.

Close in general structure to *O. tulaje*. It is a larger form, the types ranging up to 7.2 mm. in length and 4.2 mm. in width, whereas 6 mm. is the maximum recorded for *tulaje* with most individuals considerably smaller than this. A readily marked difference in the present form is that the anterior end of the body is simply obtusely angular, not with the subconical form characteristic of *tulaje*, the margin each side of the med-

ian region being at most straight or a little convex, not at all incurved. The ventral furrows are very much more deeply impressed than in *tulajc*; the preanal transverse furrow is notably wide and deep, deeper than the others, whereas in *tulajc* it is typically narrow and comparatively weak with the median and oblique furrows becoming obviously deeper caudad. Lateral wings of the camerostoma low, never lapping over the mouth-parts. Anterior emargination of the rostrum narrower and deeper than in *tulajc*. Chelicerae with structure as in the latter species or nearly so. Second joint of legs characteristically thick in comparison with the succeeding ones; distal joints without dorsal processes or tubercles.

*Locality*.—Peru: Chincha Is. Numerous specimens were collected in Oct., 1919. Type, Museum of Comparative Zoology, 526; paratypes, 527, and Brooklyn Museum.

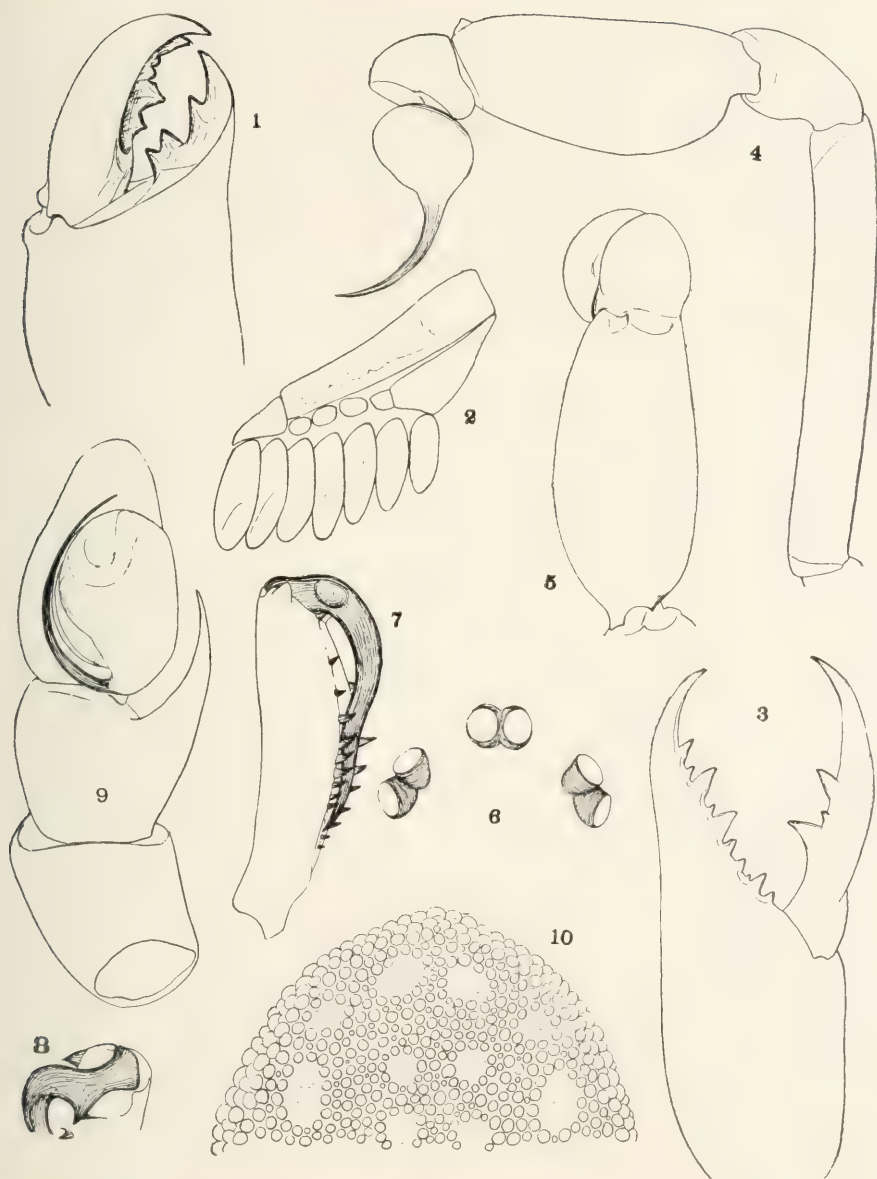
Dr. Murphy notes that these ticks are of a type "extremely abundant on all the Peruvian guano islands. They live in the soil and the guano. Color in life very pale, darkening in the preservative." The body in all the specimens at present is fuliginous with legs pale fulvous.

Larval specimens from the plumage of an adult penguin (*Spheniscus humboldti*), noted as having in life a reddish color, may pertain to this species. They are broader, more nearly circular in outline, than the larvae taken from the booby on Lobos de Tierra Id. (probably those of *O. tulajc* as previously noted), but appear to become gradually more elongate with increasing size.

#### Explanation of Plate.

- Fig. 1. *Uroctonoides fractus*, sp. nov. Chelicera, ventral view, with movable finger a little twisted to show teeth of upper margin.
- Fig. 2. *Uroctonoides fractus*, sp. nov. Comb of right side, ventral view.
- Fig. 3. *Chinchippus peruvianus*, sp. nov. Mandible, ectal view.
- Fig. 4. *Loxosceles accepta*, sp. nov. Left palpus of male, ectal view.
- Fig. 5. *Loxosceles accepta*, sp. nov. Tibia, tarsus and bulb of male palpus in dorsal view.
- Fig. 6. *Loxosceles nesophila*, sp. nov. Eyes, dorsal view.
- Fig. 7. *Tetragnatha aptans*, sp. nov. Right chelicera of female, ventral view.
- Fig. 8. *Tetragnatha aptans*, sp. nov. Subdistal view of left chelicera showing base of claw and ventral process.
- Fig. 9. *Sitticus mazorcaus*, sp. nov. Palpus of male, ventral view.
- Fig. 10. *Ornithodoros amblus*, sp. nov. Anterior end, dorsal view.





PRINTED BY  
THE MUSEUM PRESS

(Continued from Fourth Cover Page)

- Vol. 1, Consists of 17 numbers by ten authors, which relate to mammals, birds, insects, marine invertebrates, problems of zoölogical evolution, and notes on volcanic phenomena.
- Vol. 2, No. 1, Long Island Fauna and Flora.—I. The Bats (Order Chiroptera). By ROBERT CUSHMAN MURPHY AND JOHN TREADWELL NICHOLS. June 21, 1913.....\$0.15
- No. 2, Long Island Fauna and Flora.—II. A Long Island *Acmaea* and a New Variety of *Urosalpinx cinerea*. By SILAS C. WHEAT. July 16, 1913..... .10
- No. 3, Long Island Fauna and Flora.—III. The Frogs and Toads (Order Salientia). By FRANK OVERTON, A. M., M. D. Nov. 3, 1914..... .25
- No. 4, A Report on the South Georgia Expedition. By ROBERT CUSHMAN MURPHY. Nov. 5, 1914..... .25
- No. 5, The Penguins of South Georgia. By ROBERT CUSHMAN MURPHY. Aug. 2, 1915..... .50
- No. 6, A Contribution to the Ornithology of the Orinoco Region. By GEORGE K. CHERRIE. Sept. 1, 1916.. 1.75
- Vol. 3, No. 1, Long Island Fauna.—IV. The sharks. By JOHN TREADWELL NICHOLS AND ROBERT CUSHMAN MURPHY. Apr. 24, 1916..... .25

### CATALOGUES and GUIDES

- Catalogue of the Collection of Pictures illustrating the Life of Christ by JAMES J. TISSOT. 1901-'02..... .10
- Catalogue of Paintings. 1906, 1910, each..... .10
- Catalogue of Ancient Chinese Porcelains loaned by HENRY T. CHAPMAN, [1907]..... .10
- Guide to the Southwestern Indian Hall. 1907..... .05
- Guide to the Exhibits illustrating Evolution, etc. By F. A. LUCAS. 1909..... .05
- Catalogue of the Avery Collection of Ancient Chinese Cloisonnés. By JOHN GETZ; preface by W. H. GOODYEAR. 1912....paper.. 1.50  
.....cloth.. 2.00
- Exhibition of Enlarged Photographs of French Cathedrals and churches in the War Zone. By WILLIAM H. GOODYEAR. 1918 .25
- Early American Paintings: Catalogue of an Exhibition held in the Museum of the Brooklyn Institute of Arts and Sciences, Feb. 3d,-March 12th, 1917. c 1917..... 10.00

(Continued on Second Cover Page)



THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES

PUBLICATIONS OF THE MUSEUMS

ANNUAL REPORTS

Reports upon the Condition and Progress of the Museums, 1904 to date.

MUSEUM NEWS AND QUARTERLY

Children's Museum Bulletin. October 1902-March 1904. *Out of Print.*

Children's Museum News. April 1904-March 1905. *Out of Print.*

[New series] October 1913 to date; monthly, October to May.

The Museum News, issued monthly, October to May. Volumes 1 and 2, 1905-1907. *Out of Print.* Volumes 3-8, 1907-1913. Superseded by the Brooklyn Museum Quarterly and Children's Museum News [New series].

The Brooklyn Museum Quarterly. 1914 to date.

THE FOLLOWING PUBLICATIONS ARE ISSUED AT IRREGULAR INTERVALS, AND PRESENT THE ORIGINAL RESEARCHES OF THE CURATORS AND ASSISTANTS OF THE MUSEUM, AND WORK BY SPECIALISTS BASED UPON THE MUSEUM COLLECTIONS.

MEMOIRS OF ART AND ARCHAEOLOGY

Each Memoir is a complete publication and is for sale separately. Orders for purchase and correspondence regarding exchanges may be addressed to the Librarian, Brooklyn Museum, Eastern Parkway, Brooklyn, N. Y.

Vol. 1, No. 1, Renaissance leaning Façade at Genoa. By W. H. GOODYEAR. Text figures. Oct. '02.....\$0.50

No. 2, Architectural Refinements at St. Mark's at Venice. By W. H. GOODYEAR. Text figures. 31 Dec. '02.. 1.50

No. 4, Vertical Curves and other Architectural Refinements in the Gothic Cathedrals and Churches of Northern France. By W. H. GOODYEAR. Text figures. 26 April, '04..... .50

MEMOIRS OF NATURAL SCIENCE

Vol. 1, No. 1, Medusæ of the Bahamas. 7 pls. By A. G. MAYER. 20 May, '04.....\$1.00

SCIENCE BULLETIN

Each volume of the Science Bulletin contains about 400 pages of text or about 325 pages accompanied by 50 plates. The numbers are printed and sold separately. The subscription price is \$3.00 per volume, payable in advance. Subscriptions should be sent in care of the Librarian of the Brooklyn Museum, Eastern Parkway, Brooklyn, N. Y.

(Continued on Third Cover Page)



